#### PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY	"NSI					
To:	PCT PCT					
	WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY					
	(PCT Rule 43bis.1)					
	Date of mailing (day/month/year)					
Applicant's or agent's file reference	FOR FURTHER ACTION					
NT1901PCT	See paragraph 2 below					
International application No. International filing date	(day/month/year) Priority date (day/month/year)					
PCT/JP2005/000690 20.01.2005	23.01.2004					
International Patent Classification (IPC) or both national classification a  Applicant						
HITACHI PLANT ENGINEERING & CON	STRUCTION CO., LTD.					
This opinion contains indications relating to the following iter	ns:					
Box No. I Basis of the opinion						
Box No. II Priority						
Box No. III Non-establishment of opinion with regard to povelty, inventive step and industrial applicability						
Box No. IV Lack of unity of invention	•					
· · · · · · · · · · · · · · · · · · ·	bis.1(a)(i) with regard to novelty, inventive step or industrial tions supporting such statement					
Box No. VI Certain documents cited						
Box No. VII Certain defects in the international a	pplication					
Box No. VIII Certain observations on the internation	onal application					
2. FURTHER ACTION  If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of th International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.  If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA.						
written reply together, where appropriate, with amendment PCT/ISA/220 or before the expiration of 22 months from the For further options, see Form PCT/ISA/220.	s, before the expiration of 3 months from the date of maining of Form					
3. For further details, see notes to Form PCT/ISA/220.						
Name and mailing address of the ISA/JP	Authorized officer					

Facsimile No.

Box	No. I	Basis of this opinion
1.	With filed,	regard to the language, this opinion has been established on the basis of the international application in the language in which it was unless otherwise indicated under this item.
		This opinion has been established on the basis of a translation from the original language into the following language, which is the language of a translation furnished for the purposes of international search (under
	-	Rule 12.3 and 23.1(b)).
2.	With	regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed ation, this opinion has been established on the basis of:
	a.	type of material
		a sequence listing
		table(s) related to the sequence listing
	Ъ.	format of material
		in written format
		in computer readable form
	c.	time of filing/furnishing.
		contained in the international application as filed.
		filed together with the international application in computer readable form.
		furnished subsequently to this Authority for the purposes of search.
3.		In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or
J.	ш	furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4.	Λdd	itional comments:
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Box No. I	V Lack of unity of invention
1.	In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
	paid additional fees
	paid additional fees under protest
	not paid additional fees
2.	This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This	Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
	complied with
$\boxtimes$	not complied with for the following reasons:
	A part of the inventions of claims 1-6 and the inventions of claims 11 and 12 (invention group A) relates to a microorganism separating device comprising sample liquid separating means for stopping the supply of a sample liquid to a first flow passage based on the result of detection of a microorganism by a microorganism sensor and then discharging said detected microorganism from the end side of said first flow passage together with the sample liquid. A part of the inventions of claims 7-10 and the inventions of claims 11 and 12 (invention group B) relates a microorganism separating device, wherein a first flow passage and a second flow passage are connected through an orifice, and the passage of a microorganism through an orifice can be detected by a pair of electrodes placed in a first flow passage and a second flow passage, respectively.  The matter common in the invention group A and the invention group B relates to a microorganism separating device having sample supplying means, a first flow passage and a sensor capable of detecting a microorganism. However, the matter was well known before the date of priority of this application as described in JP, 9-145593, Λ, and therefore this common matter is not a special technical feature in the sense of the second paragraph of PCT Rule 13.2.
4. Con	sequently, this opinion has been established in respect of the following parts of the international application:
	all parts
	the parts relating to claims Nos.

	citations and expla	nations sup	lc 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; porting such statement	
1. Statement				
Novelt	y (N)	Claims	1-12	YES
		Claims	-	NO
Inventi	ive step (IS)	Claims	1-6, 11, 12	YES
			7-10	NO
Industr	ial applicability (IA)	Claims	1-12	YES
		Claims		NO
	·			
Docum none) Docum (Family Docum none) Docum pages 2 Docum 1999, V	ent 4: JP, 2000-7 ent 5: JP, 2003-2 ent 6: JP, 2003-2 ent 7: A.Y. Fu et 451-2457 ent 8: A.Y. Fu et 70l. 17, pages 116 The subject mat ents 1-8 cited in t Documents 1 an sage of a microor ribe a device sep-	4816, A 84544, A 74924, A al., An in al., Λ m 09-1111 ters of cl he ISR. id 2 are c ganism t	ikon Corporation), 6 June, 1997 (06.06.97), full text (Family: 1 (Nireco Corporation), 14 March, 2000 (14.03.00), full text (Family: 1 (Aisin Seiki Co., Ltd.), 7 October, 2003 (07.10.03), full text (Jun Kikuchi), 30 September, 2003 (30.09.03), full text (Family: 1	mily: ily: 74, ol., f

#### PATENT COOPERATION TREATY

TRANSLATION INTERNATIONAL SEARCHING AUTHORITY To: WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1) Date of mailing (day/month/year) Applicant's or agent's file reference FOR FURTHER ACTION NT1901PCT See paragraph 2 below Priority date (day/month/year) International filing date (day/month/year) International application No. 23.01.2004 20.01.2005 PCT/JP2005/000690 International Patent Classification (IPC) or both national classification and IPC HITACHI PLANT ENGINEERING & CONSTRUCTION CO., LTD. This opinion contains indications relating to the following items:  $\bowtie$ Box No. I Basis of the opinion Box No. II Priority Non-establishment of opinion with regard to novelty, inventive step and industrial applicability Box No. III Box No. IV Lack of unity of invention Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial Box No. V applicability; citations and explanations supporting such statement Box No. VI Certain documents cited Certain defects in the international application Box No. VII Certain observations on the international application Box No. VIII FURTHER ACTION If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered. If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PC1/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later. For further options, see Form PCT/ISA/220. For further details, see notes to Form PCT/ISA/220. Authorized officer Name and mailing address of the ISA/JP

Telephone No.

Facsimile No.

Вох	No. 1 Busis of this opinion
1.	With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
	This opinion has been established on the basis of a translation from the original language into the following language, which is the language of a translation furnished for the purposes of international search (under
	Rule 12.3 and 23.1(b)).
2.	With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
	a. type of material
f	a sequence listing
	table(s) related to the sequence listing
	b. format of material
	in written format
	in computer readable form
	c. time of filling/turnishing
	contained in the international application as filed.
	tiled together with the international application in computer readable form.
	furnished subsequently to this Authority for the purposes of search.
	In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or
3.	In addition, in the case that more than one version or copy of a sequence fishing and/or table, retaining insection has been the case furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
	nied or does not go beyond the application as they, as appropriate, were turnished.
4.	Additional comments:
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	f .

Box	No. IV Luck o	funity of invention
1.	In response to t	he invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
	paid addit	tional fees
	paid addit	tional fees under protest
	not paid a	additional fees
2.	This Authority additional fees.	found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay
3.	This Authority consid	ders that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
	complied with	
	not complied w	rith for the following reasons:
÷	group A) remeans for sedetection of microorgar part of the relates a magnetic part of the respectivel Transcroorgar sensor capadate of prices of the respective of the respect	part of the inventions of claims 1-6 and the inventions of claims 11 and 12 (invention elates to a microorganism separating device comprising sample liquid separating stopping the supply of a sample liquid to a first flow passage based on the result of if a microorganism by a microorganism sensor and then discharging said detected hism from the end side of said first flow passage together with the sample liquid. A inventions of claims 7-10 and the inventions of claims 11 and 12 (invention group B) dicroorganism separating device, wherein a first flow passage and a second flow the connected through an orifice, and the passage of a microorganism through an orifice extend by a pair of electrodes placed in a first flow passage and a second flow passage, by the matter common in the invention group A and the invention group B relates to a mism separating device having sample supplying means, a first flow passage and a able of detecting a microorganism. However, the matter was well known before the ority of this application as described in JP, 9-145593, $\Lambda$ , and therefore this common of a special technical feature in the sense of the second paragraph of PCT Rule 13.2.
	•	
		•
4.	Consequently, this of	opinion has been established in respect of the following parts of the international application:
	all parts	•
	<b>=</b> ·	ing to claims Nos.
1	ine parts relat	ing to Cidinis 1705.

Box No. V			ale 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; poorting such statement	
1. Statement				
. Novelty	(N)	Claims	1-12	YES
		Claims		_ NO
	(10)			-
Inventiv	ve step (IS)		1-6, 11, 12	
•		Claims	7-10	- NO
Industri	al applicability (IA)	Claims	1-12	_ YES
		Claims		_ NO
2. Citations ar	nd explanations:	•		
US, 200 Docume Docume (Family: Docume none) Docume pages 24 Docume 1999, Va docume the passe to descri	ent 2: JP, 2001-3 1/0032495, A1 ent 3: JP, 9-1455 ent 4: JP, 2000-7 ent 5: JP, 2003-2 ent 6: JP, 2003-2 ent 7: A.Y. Fu et 451-2457 ent 8: A.Y. Fu et ol. 17, pages 110 The subject mat ents 1-8 cited in t Documents 1 an age of a microor ibe a device sepa Accordingly, a paginisms by deter	93, A (N 4816, A 84544, A 74924, A al., An in al., A min 99-1111 ters of cla he ISR. d 2 are conganism to person skeeting the	A (Sysmex Corporation), 31 October, 2001 (31.10.01), full text (knoth Corporation), 6 June, 1997 (06.06.97), full text (Family: (Nireco Corporation), 14 March, 2000 (14.03.00), full text (Family: (Aisin Seiki Co., Ltd.), 7 October, 2003 (07.10.03), full text (Jun Kikuchi), 30 September, 2003 (30.09.03), full text (Familtegrated microfabricated cell sorter, Anal. Chem., 2002, Vol. icrofabricated fluorescence-activated cell sorter, Nat. Biotechrough an orifice using an electrode. Documents 3-8 are considered to describe a microorganism detecting device detect hrough an orifice using an electrode. Documents 3-8 are considered in the art could have easily conceived that a device separ passage of a microorganism through an orifice using an electrons of documents 1-8. At this time, a person skilled in the art	none) amily: 74, nol., of cing dered

#### PATENT COOPERATION TREATY

TRANSLATION From the INTERNATIONAL SEARCHING AUTHORITY To: WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1) Date of mailing (day/month/year) FOR FURTHER ACTION Applicant's or agent's file reference See paragraph 2 below NT1901PCT Priority date (day/month/year) International filing date (day/month/year) International application No. 23.01.2004 20.01.2005 PCT/JP2005/000690 International Patent Classification (IPC) or both national classification and IPC Applicant HITACHI PLANT ENGINEERING & CONSTRUCTION CO., LTD. This opinion contains indications relating to the following items: Box No. I Basis of the opinion Box No. II Non-establishment of opinion with regard to novelty, inventive step and industrial applicability Box No. III Lack of unity of invention Box No. IV Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial Box No. V applicability; citations and explanations supporting such statement Certain documents cited Box No. VI Certain defects in the international application Box No. VII Certain observations on the international application Box No. VIII FURTHER ACTION If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered. If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCI/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later. For further options, see Form PCT/ISA/220. For further details, see notes to Form PCT/ISA/220. Authorized officer Name and mailing address of the ISA/JP

Telephone No

Form PCT/ISA/237 (cover sheet) (January 2004)

Facsimile No.

International application No.

PCT/JP2005/000690 Box No. I Basis of this opinion With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item. This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)). With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of: type of material a sequence listing table(s) related to the sequence listing format of material in written format in computer readable form time of filing/furnishing contained in the international application as filed. filed together with the international application in computer readable form. furnished subsequently to this Authority for the purposes of search. In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished. Additional comments:

1. In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:    paid additional fees
paid additional fees  paid additional fees  This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.  This Authority found that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is  complied with  not complied with for the following reasons:  A part of the inventions of claims 1-6 and the inventions of claims 11 and 12 (invention group A) relates to a microorganism separating device comprising sample liquid separating means for stopping the supply of a sample liquid to a first flow passage based on the result of detection of a microorganism by a microorganism sensor and then discharging said detected microorganism from the end side of said first flow passage together with the sample liquid. A part of the inventions of claims 7-10 and the inventions of claims 11 and 12 (invention group B) relates a microorganism separating device, wherein a first flow passage and a second flow passage are connected through an orifice, and the passage of a microorganism through an orifice can be detected by a pair of electrodes placed in a first flow passage and a second flow passage, respectively.  The matter common in the invention group A and the invention group B relates to a
paid additional fees  2. This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.  3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is complied with  not complied with for the following reasons:  A part of the inventions of claims 1-6 and the inventions of claims 11 and 12 (invention group A) relates to a microorganism separating device comprising sample liquid separating means for stopping the supply of a sample liquid to a first flow passage based on the result of detection of a microorganism by a microorganism sensor and then discharging said detected microorganism from the end side of said first flow passage together with the sample liquid. A part of the inventions of claims 7-10 and the inventions of claims 11 and 12 (invention group B) relates a microorganism separating device, wherein a first flow passage and a second flow passage are connected through an orifice, and the passage of a microorganism through an orifice can be detected by a pair of electrodes placed in a first flow passage and a second flow passage, respectively.  The matter common in the invention group A and the invention group B relates to a
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complied with  not complied with for the following reasons:  A part of the inventions of claims 1-6 and the inventions of claims 11 and 12 (invention group A) relates to a microorganism separating device comprising sample liquid separating means for stopping the supply of a sample liquid to a first flow passage based on the result of detection of a microorganism by a microorganism sensor and then discharging said detected microorganism from the end side of said first flow passage together with the sample liquid. A part of the inventions of claims 7-10 and the inventions of claims 11 and 12 (invention group B) relates a microorganism separating device, wherein a first flow passage and a second flow passage are connected through an orifice, and the passage of a microorganism through an orifice can be detected by a pair of electrodes placed in a first flow passage and a second flow passage, respectively.  The matter common in the invention group A and the invention group B relates to a
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group A) relates to a microorganism separating device comprising sample liquid separating means for stopping the supply of a sample liquid to a first flow passage based on the result of detection of a microorganism by a microorganism sensor and then discharging said detected microorganism from the end side of said first flow passage together with the sample liquid. A part of the inventions of claims 7-10 and the inventions of claims 11 and 12 (invention group B) relates a microorganism separating device, wherein a first flow passage and a second flow passage are connected through an orifice, and the passage of a microorganism through an orifice can be detected by a pair of electrodes placed in a first flow passage and a second flow passage, respectively.  The matter common in the invention group A and the invention group B relates to a
microorganism separating device having sample supplying means, a first flow passage and a sensor capable of detecting a microorganism. However, the matter was well known before the date of priority of this application as described in JP, 9-145593, Λ, and therefore this common matter is not a special technical feature in the sense of the second paragraph of PCT Rule 13.2.
*
4. Consequently, this opinion has been established in respect of the following parts of the international application:
all parts
the parts relating to claims Nos.

International application No.
PCT/JP2005/000690

Bo	No. V Reasoned stateme	nt under Ru anations sur	ale 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; poorting such statement	
1.	Statement			
	Novelty (N)	Claims	1-12	YES
		Claims		_ NO
	Inventive step (IS)	- Claims	1-6, 11, 12	YE
	• • •	Claims	7-10	– – <sup>NO</sup>
	Industrial applicability (IA)	Claime	1-12	YE
		Claims		- NO
2.	(Family: none) Document 2: JP, 2001-3 US, 2001/0032495, A1	05041, /	Sysmex Corporation), 15 October, 1999 (15.10.99), full text (Sysmex Corporation), 31 October, 2001 (31.10.01), full text likon Corporation), 6 June, 1997 (06.06.97), full text (Family:	
	Document 4: JP, 2000-7 none) Document 5: JP, 2003-2 (Family: none) Document 6: JP, 2003-2 none) Document 7: A.Y. Fu et pages 2451-2457	/4816, A /284544, A /274924, A /2 al., An i	(Nireco Corporation), 14 March, 2000 (14.03.00), full text (Fa A (Aisin Seiki Co., Ltd.), 7 October, 2003 (07.10.03), full text A (Jun Kikuchi), 30 September, 2003 (30.09.03), full text (Fan integrated microfabricated cell sorter, Anal. Chem., 2002, Vol. dicrofabricated fluorescence-activated cell sorter, Nat. Biotechnicated cell sorter, Nat. Biotechnicated cell sorter, Nat.	amily nily: . 74,

The subject matters of claims 7-10 do not appear to involve an inventive step in view of documents 1-8 cited in the ISR.

Documents 1 and 2 are considered to describe a microorganism detecting device detecting the passage of a microorganism through an orifice using an electrode. Documents 3-8 are considered to describe a device separating microorganisms using various kinds of signals.

Accordingly, a person skilled in the art could have easily conceived that a device separating microorganisms by detecting the passage of a microorganism through an orifice using an electrode is produced referring to the descriptions of documents 1-8. At this time, a person skilled in the art could have accordingly made a discharge port and the like suitable and made the positional relation between the electrode and the orifice suitable.

The subject matters of claims 7-10 are not considered to exhibit a remarkable effect.

The subject matters of claims 1-6, 11 and 12 are neither described in any of the documents cited in the ISR nor obvious to a person skilled in the art.